CLAIMS

1. A computer system, comprising:
    a plurality of computer processor cores in which
at least two differ in processing performance, and in which
all execute the same instruction set; and
    a performance measurement and transfer mechanism
for distributing a plurality of computer processing jobs
amongst the plurality of computer processor cores according
to a best fit of processor hardware availability to
processing software requirements.

2. The computer system of claim 1, further comprising:
    at least one of an operating system, firmware, and
special-purpose hardware hosted on the plurality of computer
processor cores and including the performance measurement
and transfer mechanism, and providing for a periodic test of
whether a particular computer processing job would be a
better fit of processor hardware availability to processing
software requirements on a different hosted one of the
plurality of computer processor cores.

3. The computer system of claim 1, further comprising:
    at least one of an operating system, firmware, and
special-purpose hardware hosted on the plurality of computer
processor cores and including the performance measurement
and transfer mechanism, and providing for a periodic test of
whether a particular computer processing job was a better
fit of processor hardware availability to processing
software requirements on a previously hosted one of the
plurality of computer processor cores.

4. The computer system of claim 1, further comprising:
    at least one of an operating system, firmware, and
special-purpose hardware hosted on the plurality of computer
processor cores and including the performance measurement

17

and transfer mechanism, and providing for a test of
particular operating states within each of the computer
processor cores in a decision as to where to place a given
processing software workload.

5

       5. The computer system of claim 1, further comprising:
          at least one of an operating system, firmware, and
special-purpose hardware hosted on the plurality of computer
processor cores and including the performance measurement

10 and transfer mechanism, and providing for a test of
operating states within each of the computer processor cores
in a decision as to where to place a given processing
software workload, wherein said operating states are
dependent on at least one of the operating voltage and clock

15 frequency of a corresponding one of the plurality of
computer processor cores.

       6. The computer system of claim 1, further comprising:
          at least one of an operating system, firmware, and

20 special-purpose hardware hosted on the plurality of computer
processor cores and including the performance measurement
and transfer mechanism, and providing for a test of
operating states within each of the computer processor cores
in a decision as to where to place a given processing

25 software workload, wherein said operating states are
dependent on run-time re-configuration of hardware
structures of corresponding ones of the plurality of
computer processor cores.

30   7. A method for operating multiple processor cores,
comprising:
          placing a plurality of computer processor cores on
a single semiconductor die, in which at least two computer
processor cores differ in processing performance, and in

35 which all execute the same instruction set;

18

measuring the performance of each of a plurality
of computer processing jobs hosted amongst the plurality of
computer processor cores; and

transferring individual ones of said plurality of

5   computer processing jobs amongst targeted ones of said
plurality of computer processor cores according to a best
fit of processor hardware availability to processing
software requirements.

10   8. The method of claim 7, further comprising:

hosting at least one of an operating system,
firmware, and special-purpose hardware on the plurality of
computer processor cores to include performance measurement
and transfer mechanisms, and providing for a periodic test

15   of whether a particular computer processing job would be a
better fit of processor hardware availability to processing
software requirements on a different hosted one of said
plurality of computer processor cores.

20   9. The method of claim 7, further comprising:

hosting at least one of an operating system,
firmware, and special-purpose hardware on the plurality of
computer processor cores to include a performance
measurement and transfer mechanism, and providing for a

25   periodic test of whether a particular computer processing
job was a better fit of processor hardware availability to
processing software requirements on a previously hosted one
of said plurality of computer processor cores.

30   10. The method of claim 7, further comprising:

hosting at least one of an operating system,
firmware, and special-purpose hardware on the plurality of
computer processor cores to include a performance
measurement and transfer mechanism, and providing for a test

35   of particular operating states within each of said computer

processor cores in a decision as to where to place a given
processing software workload.

11. The method of claim 7, further comprising:
hosting at least one of an operating system,
firmware, and special-purpose hardware on the plurality of
computer processor cores to include a performance
measurement and transfer mechanism, and providing for a test
of operating states within each of the computer processor
cores in a decision as to where to place a given processing
software workload, wherein said operating states are
dependent on at least one of the operating voltage and clock
frequency of a corresponding one of the plurality of
computer processor cores.

12. The method of claim 7, further comprising:
hosting at least one of an operating system,
firmware, and special-purpose hardware on the plurality of
computer processor cores to include a performance
measurement and transfer mechanism, and providing for a test
of operating states within each of the computer processor
cores in a decision as to where to place a given processing
software workload, wherein said operating states are
dependent on run-time re-configuration of hardware
structures of corresponding ones of the plurality of
computer processor cores.

13. The method of claim 7, further comprising:
statically associating workloads for execution on
specific processor cores based on a profiling history.

14. The method of claim 7, further comprising:
dynamically associating workloads for execution on
specific processor cores based on an empirical measurement.

15. The method of claim 7, further comprising:

      associating workloads for execution on specific processor cores based on at least one of user and application hints.

16. A computer system, comprising:

      a plurality of computer processor cores in which at least two differ in processing performance, and in which all execute the same instruction set; and

      a performance measurement and transfer mechanism for distributing a plurality of computer processing jobs amongst the plurality of computer processor cores according to a best fit of processor hardware availability to processing software requirements;

      wherein, said processing performances depend on a forecast of particular processing jobs that will be executed.